

WHAT IS CLAIMED IS

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1. A method of compensating waveform degradation on a transmission signal by using a plurality of compensation circuits, comprising the steps of:

a) providing at least one of code error information and code error correction information on the transmission signal for which the compensation has been performed by the plurality of compensation circuits, to respective ones of the plurality of compensation circuits; and

b) controlling each of the plurality of compensation circuits individually based on the thus-provided at least one of the code error information and code error correction information so as to compensate the waveform degradation on the transmission signal.

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2. The method as claimed in claim 1, wherein said plurality of compensation circuits performs at least two of output power control, chirp parameter control, transmission-end variable dispersion compensation control, polarization dispersion compensation control, reception-end variable dispersion compensation control, reception-end identification level control and identification phase control.

3. The method as claimed in claim 1,
wherein said step a) comprises the step of selecting
one of the plurality of compensation circuits one by
one, and providing to the thus-selected one at least
5 one of the code error information and code error
correction information on the transmission signal
for which the compensation control has been
performed by the plurality of compensation circuits.

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4. The method as claimed in claim 3,
wherein said step a) stops provision of the at least
15 one of the code error information and code error
correction information when substantially no more
code error or code error correction occurs.

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5. The method as claimed in claim 3,
wherein said step a) continues operation of
providing the at least one of the code error
25 information and code error correction information
until the difference between a current set value and
a preceding set value controlling the compensation
circuit becomes smaller than a predetermined target
value.

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6. The method as claimed in claim 3,
35 wherein said step a) starts provision of the at
least one of the code error information and code
error correction information when at least one of

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code error rate or code error correction rate on the transmission signal exceeds a predetermined threshold.

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10 7. The method as claimed in claim 1, wherein said plurality of compensation circuits comprises those provided in both a transmission end and a reception end of transmission of the transmission signal.

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20 8. A transmission characteristic compensation apparatus which compensates waveform degradation on a transmission signal by using a plurality of compensation circuits, comprising:
a first part providing at least one of code error information and code error correction information on the transmission signal for which the
25 compensation has been performed by the plurality of compensation circuits, to respective ones of the plurality of compensation circuits; and
a second part controlling each of the plurality of compensation circuits individually
30 based on the thus-provided at least one of the code error information and code error correction information so as to compensate the waveform degradation on the transmission signal.

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9. A transmission characteristic compensation system for compensating waveform degradation on a transmission signal by using a plurality of compensation circuits, comprising:

- 5 a first part providing at least one of code error information and code error correction information on the transmission signal for which the compensation has been performed by the plurality of compensation circuits, to respective ones of the
- 10 plurality of compensation circuits; and
- a second part controlling each of the compensation circuits individually based on the thus-provided at least one of the code error information and code error correction information so
- 15 as to compensate the waveform degradation on the transmission signal.

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